

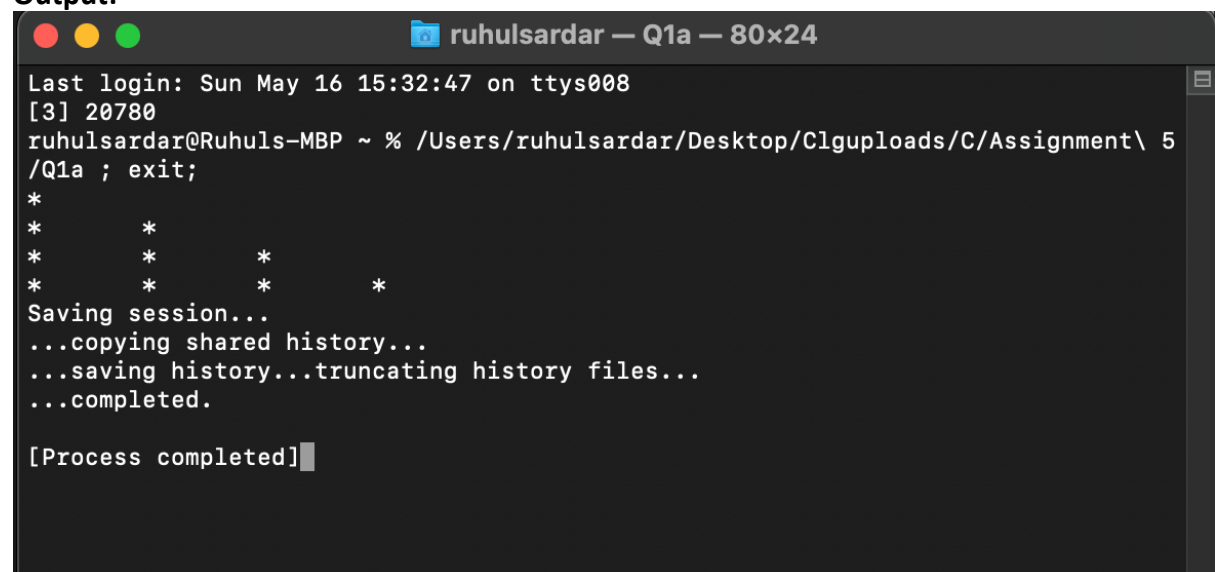
//Q.28.a.

```
#include <stdio.h>
```

```
int main(){
    int i,j;
    for ( i = 1; i <= 4; i ++){
        for ( j = 1; j <= i; j++){
            if(j <= i){
                printf("*\t");
            }
            else{
                printf("\t");
            }
        }
        printf("\n");
    }
}
```

```
    return 0;
}
```

Output:



```
ruhulsardar — Q1a — 80x24
Last login: Sun May 16 15:32:47 on ttys008
[3] 20780
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q1a ; exit;
*
*      *
*      *      *
*      *      *      *
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

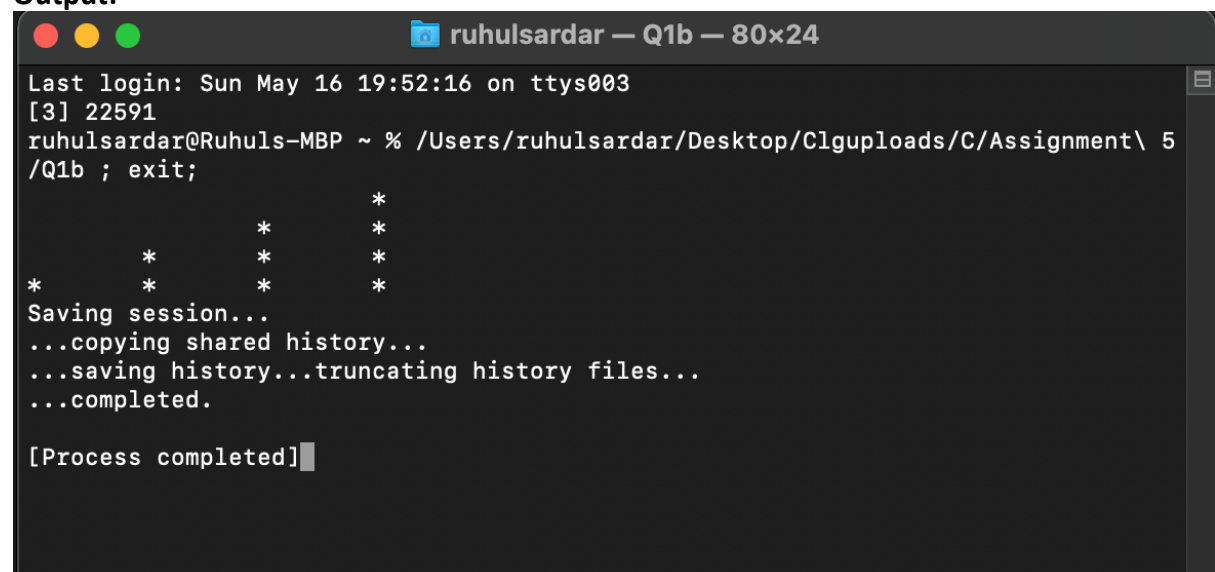
//Q.28.b.

```
#include<stdio.h>
```

```
int main(){
    int i,j;
    for(i = 1; i <= 4; i++){
        for( j = 1; j <= 4; j++){
            if( j < 4-(i-1)){
                printf("\t");
            }
            else{
                printf("*\t");
            }
        }
        printf("\n");
    }
}
```

```
    return 0;
}
```

Output:



```
ruhulsardar — Q1b — 80x24
Last login: Sun May 16 19:52:16 on ttys003
[3] 22591
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q1b ; exit;

          *
        * *
      * * *
    * * * *
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

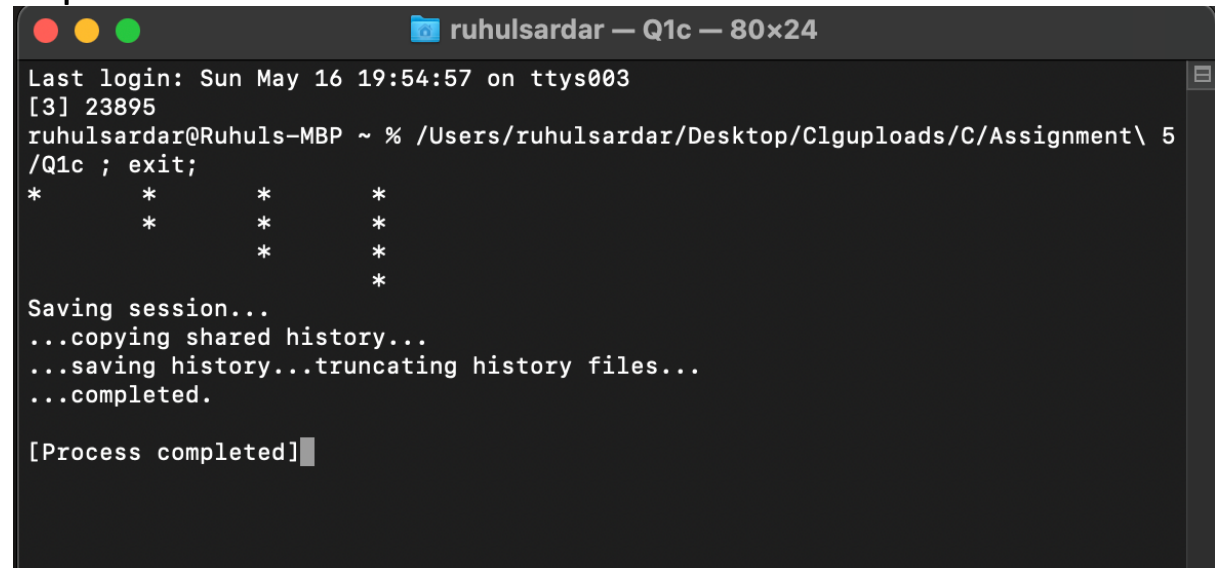
//Q.28.c.

```
#include<stdio.h>
```

```
int main(){
    int i,j;
    for(i = 1; i <= 4; i++){
        for( j = 1; j <= 4; j++){
            if( j <= 4 && j > (i-1)){
                printf("*\t");
            }
            else{
                printf("\t");
            }
        }
        printf("\n");
    }
}
```

```
    return 0;
}
```

Output:



```
ruhulsardar — Q1c — 80x24
Last login: Sun May 16 19:54:57 on ttys003
[3] 23895
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q1c ; exit;
*      *      *      *
      *      *      *
            *      *
                  *

Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

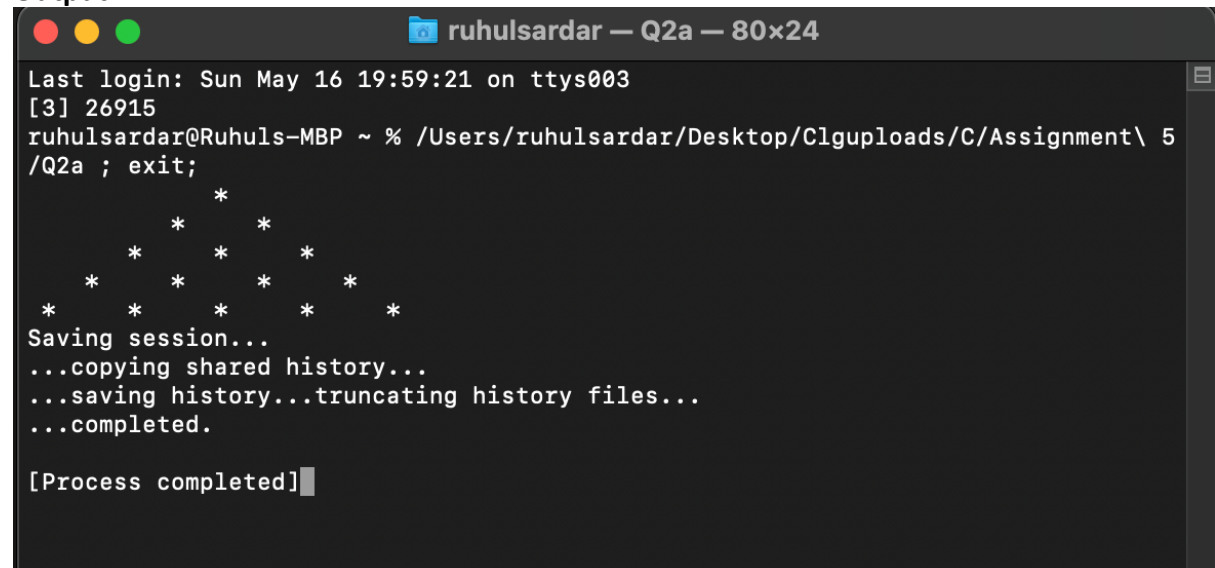
//Q.29.a.

```
#include<stdio.h>
```

```
int main(){
    int i,j,k=1;
    for( i = 1; i <= 5; i++){
        for( j = 1; j<=9; j++){
            if ( j>=5-(i-1) && j<=5+(i-1) && k){
                printf(" * ");
                k = 0;
            }
            else {
                printf(" ");
                k = 1;
            }
        }
        printf("\n");
    }

    return 0;
}
```

Output:



```
ruhulsardar — Q2a — 80x24
Last login: Sun May 16 19:59:21 on ttys003
[3] 26915
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q2a ; exit;
      *
     * *
    * * *
   * * * *
  * * * * *
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

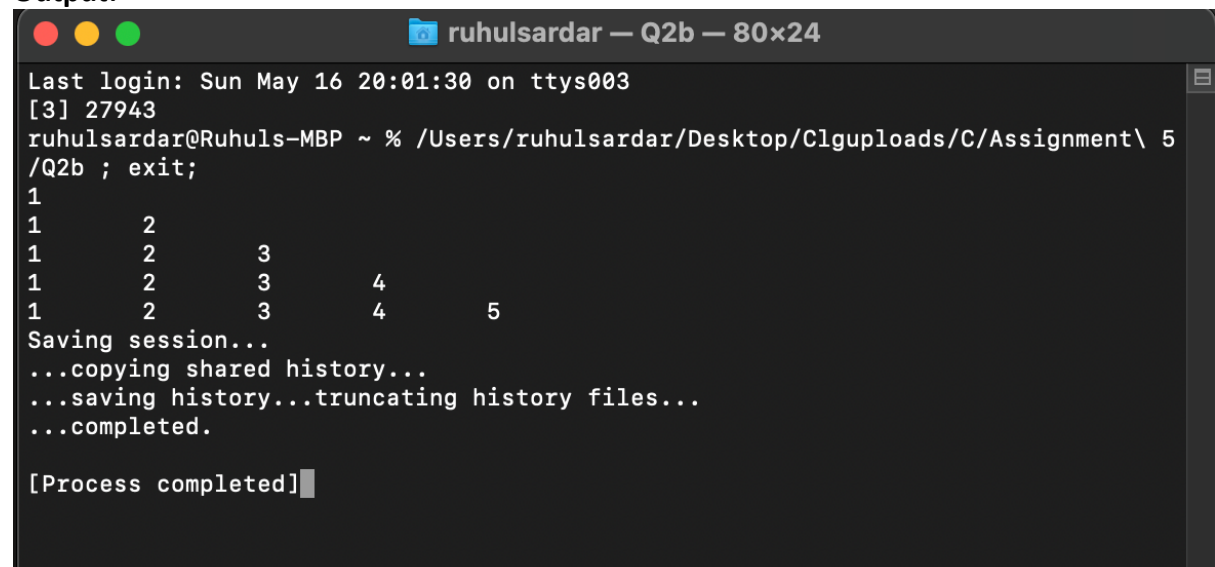
//Q.29.b.

```
#include<stdio.h>
```

```
int main(){
    int i, j, k;
    for(i=1; i<=5; i++){
        k = 1;
        for(j=1; j<=5; j++){
            if(j <= i){
                while (k <= i){
                    printf("%d\t", k );
                    k++;
                }
            }
            else{
                printf("\t");
            }
        }
        printf("\n");
    }
}
```

```
    return 0;
}
```

Output:



```
ruhulsardar — Q2b — 80x24
Last login: Sun May 16 20:01:30 on ttys003
[3] 27943
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q2b ; exit;
1
1      2
1      2      3
1      2      3      4
1      2      3      4      5
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

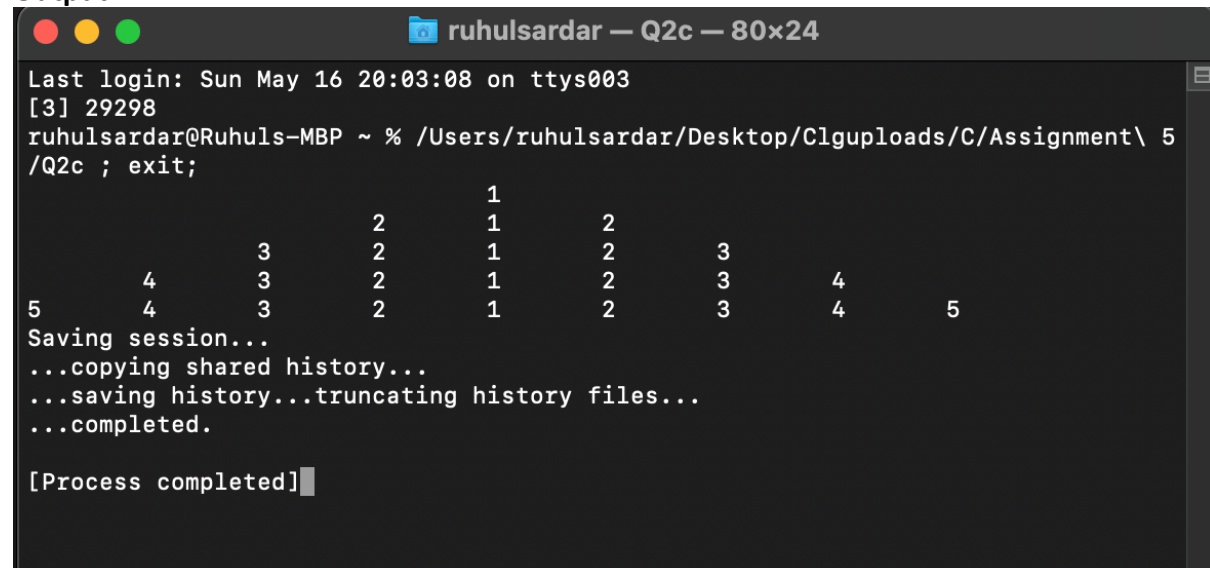
//Q.29.c.

```
#include<stdio.h>
```

```
int main(){
    int clrscr();
    int i,j,k;
    for( i = 1; i <= 5; i++){
        k=i;
        for( j = 1; j<=9; j++){
            if ( j>=5-(i-1) && j<=5+(i-1)){
                printf("%d\t", k);
                j<5?k--:k++;
            }
            else {
                printf("\t");
            }
        }
        printf("\n");
    }

    return 0;
}
```

Output:



```
ruhulsardar — Q2c — 80x24
Last login: Sun May 16 20:03:08 on ttys003
[3] 29298
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q2c ; exit;

          1
        2 1 2
      3 2 1 2 3
    4 3 2 1 2 3 4
5 4 3 2 1 2 3 4 5
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

//Q.30.a.

```
#include<stdio.h>
```

```
int main(){
    int i,j,k;
    for( i = 1; i <= 4; i++){
        k=i;
        for( j = 1; j<=7; j++){
            if ( j>=4-(i-1) && j<=4+(i-1)){
                printf("%d\t", k);
                j<4?k++:k--;
            }
            else {
                printf("\t");
            }
        }
        printf("\n");
    }

    return 0;
}
```

Output:

```

Last login: Sun May 16 20:05:09 on ttys003
[3] 30677
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q3a ; exit;

      1
    2   3   4
  3   4   5   3
4   5   6   7   6   5   4

Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

//Q.30.b.

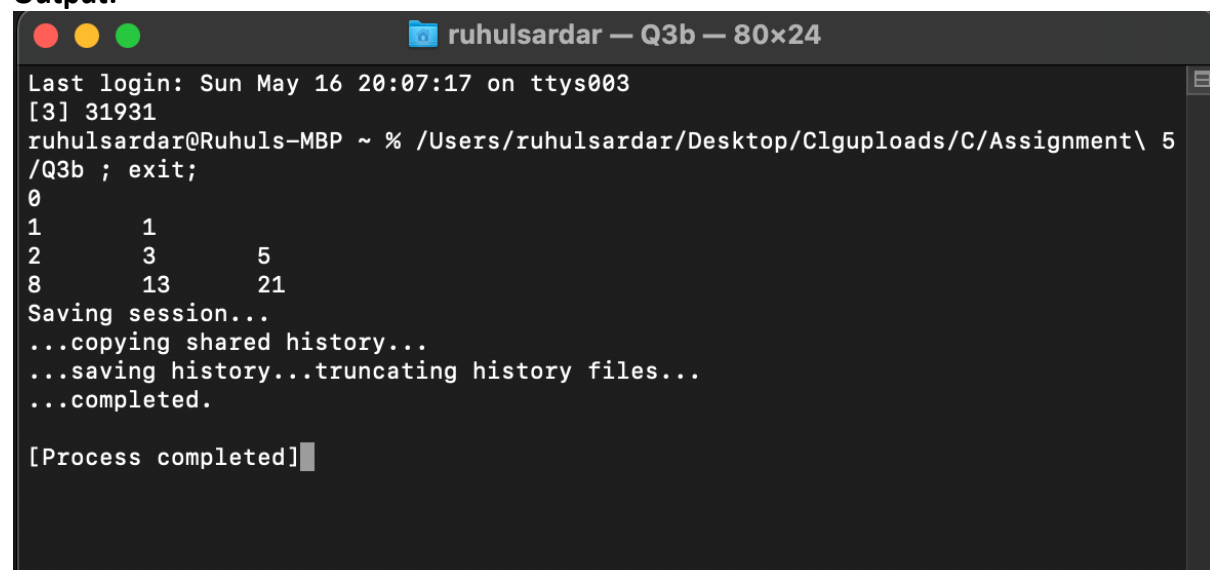
```
#include<stdio.h>
```

```
int main(){
    int i,j,n1=0, n2=1,sum=1;
    for(i=1; i<=4; i++){
        for(j=1; j<=i; j++){
            if(i==1 && j==1){
                printf("%d", n1);
                continue;
            }
            if(j==4){
                continue;
            }
            printf("%d\t", sum);
            sum = n1+n2;
            n1 = n2;
            n2 = sum;

        }
        printf("\n");
    }

    return 0;
}
```

Output:



```
ruhulsardar — Q3b — 80x24
Last login: Sun May 16 20:07:17 on ttys003
[3] 31931
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q3b ; exit;
0
1      1
2      3      5
8      13     21
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

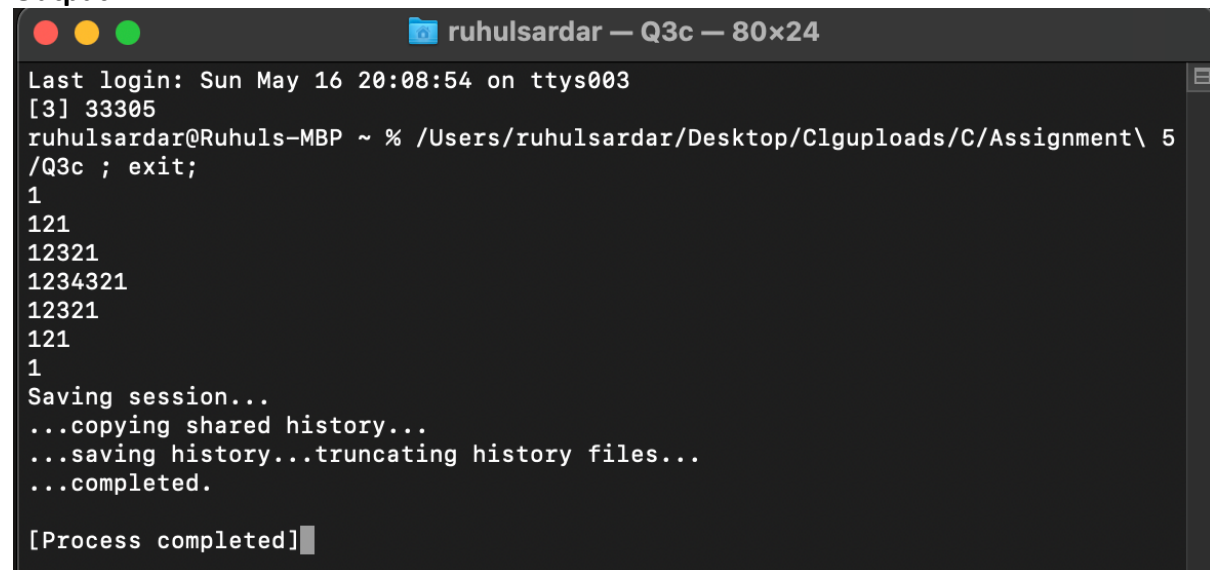

//Q.30.c.

```
#include<stdio.h>
```

```
int main(){
    int i, j, k;
    for(i=1; i<=4; i++){
        k=1;
        for(j=1; j<=7; j++){
            if(j<=(2*i)-1){
                printf("%d", k);
                j<i?k++:k--;
            }
        }
        printf("\n");
    }
    for(i = 1; i < 4; i++){
        k=1;
        for( j = 1; j < 6; j++){
            if( j <= 5-(2*(i-1))){
                printf("%d", k);
                j<((2+i)/i)?k++:k--;
            }
        }
        printf("\n");
    }

    return 0;
}
```

Output:



```
ruhulsardar — Q3c — 80x24
Last login: Sun May 16 20:08:54 on ttys003
[3] 33305
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q3c ; exit;
1
121
12321
1234321
12321
121
1
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

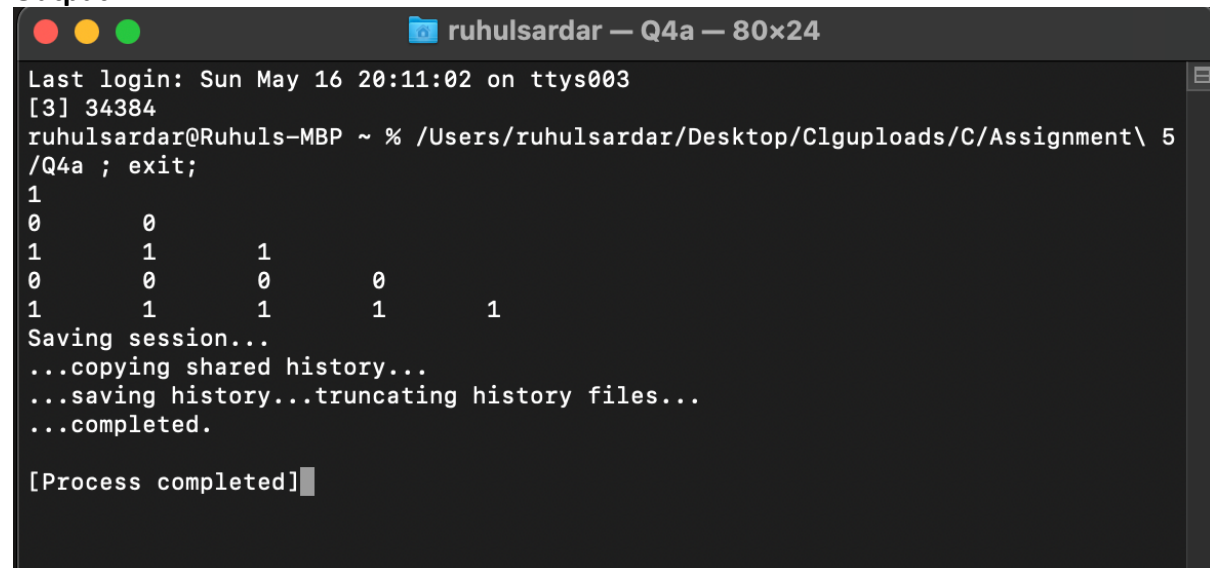
//Q.31.a.

```
#include<stdio.h>
```

```
int main(){
    int i, j, count=1;
    for(i=1; i<=5; i++){
        for(j=1; j<=i; j++){
            printf("%d\t", count%2);
            count++;
        }
        if(i%2==0){
            count = 1;
        }
        else{
            count = 0;
        }
        printf("\n");
    }

    return 0;
}
```

Output:



```
ruhulsardar — Q4a — 80x24
Last login: Sun May 16 20:11:02 on ttys003
[3] 34384
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q4a ; exit;
1
0      0
1      1      1
0      0      0      0
1      1      1      1      1
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

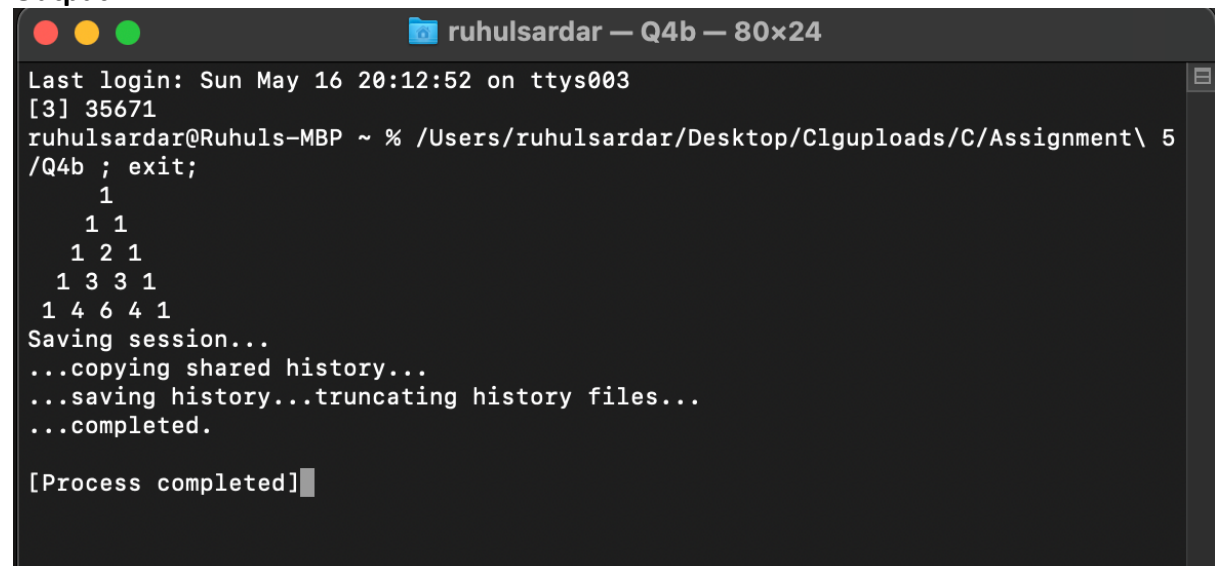
//Q.31.b.

```
#include<stdio.h>
```

```
int main(){
    int i, j, ncr, k;
    for(i=0; i<=4; i++){
        for(j=1; j<=4-i; j++){
            printf(" ");
        }
        for(k=0; k<=i; k++){
            if( k==0 ){
                ncr = 1;
                printf("%2d", ncr);
            }
            else{
                ncr = ncr * (i-k+1)/k;
                printf("%2d", ncr);
            }
        }
        printf("\n");
    }

    return 0;
}
```

Output:

A screenshot of a terminal window titled "ruhulsardar — Q4b — 80x24". The terminal shows the output of the program, which is a Pascal's triangle with 5 rows. The first row is "1", the second is "1 1", the third is "1 2 1", the fourth is "1 3 3 1", and the fifth is "1 4 6 4 1". Below the triangle, the terminal shows the messages "Saving session...", "...copying shared history...", "...saving history...truncating history files...", and "...completed.". At the bottom, it says "[Process completed]".

```
Last login: Sun May 16 20:12:52 on ttys003
[3] 35671
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q4b ; exit;
    1
   1 1
  1 2 1
 1 3 3 1
1 4 6 4 1
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

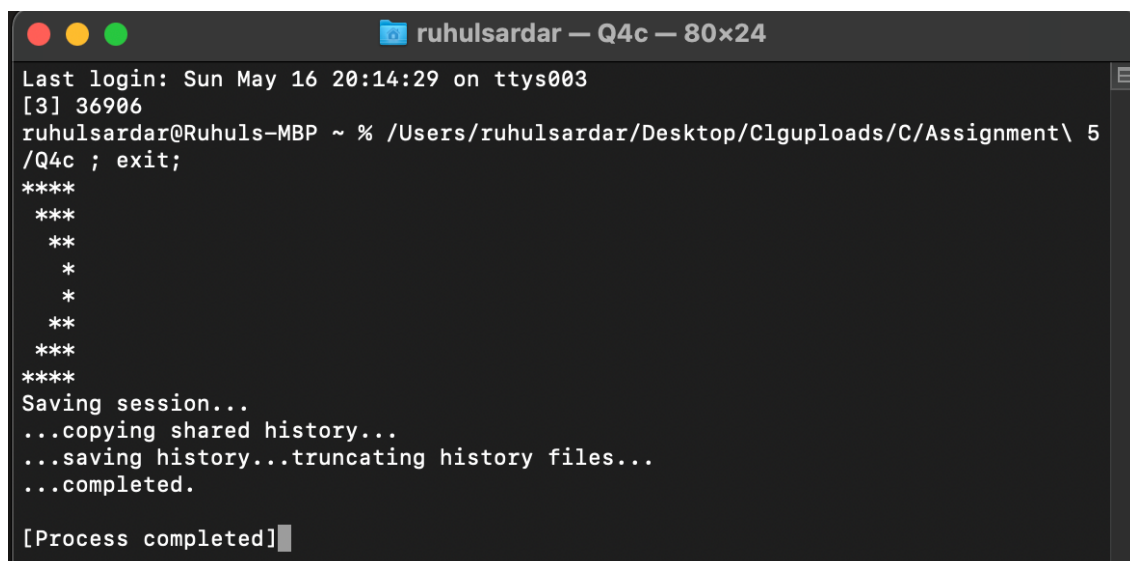
//Q.31.c.

```
#include<stdio.h>
```

```
int main(){
    int i,j;
    for(i = 1; i <= 4; i++){
        for( j = 1; j <= 4; j++){
            if( j <= 4 && j > (i-1)){
                printf("*");
            }
            else{
                printf(" ");
            }
        }
        printf("\n");
    }
    for(i = 1; i <= 4; i++){
        for( j = 1; j <= 4; j++){
            if( j < 4-(i-1)){
                printf(" ");
            }
            else{
                printf("*");
            }
        }
        printf("\n");
    }

    return 0;
}
```

Output:



```
ruhulsardar — Q4c — 80x24
Last login: Sun May 16 20:14:29 on ttys003
[3] 36906
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q4c ; exit;
****
***
**
*
*
**
***
****
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```

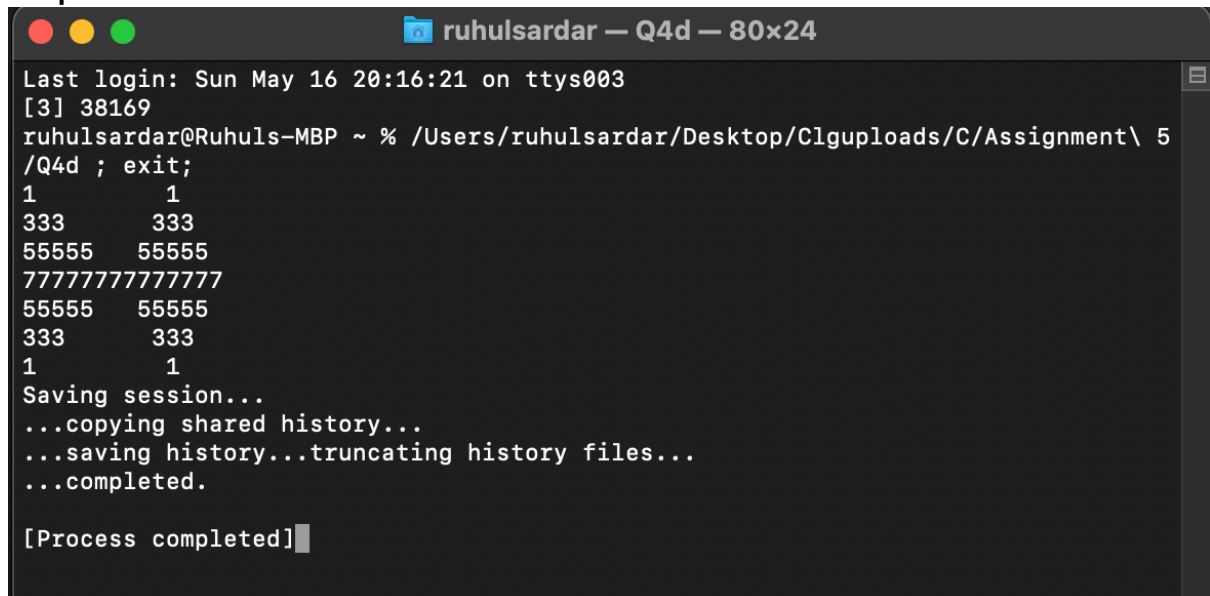
//Q.31.d.

```
#include<stdio.h>
```

```
int main(){
    int i, j, k, l;
    for(i=1; i<=4; i++){
        for(j=1; j<=(2*i)-1; j++){
            printf("%d", i+(i-1));
        }
        for(k=1; k<=7; k++){
            if(k>=2*i && k<=7){
                printf(" ");
            }
        }
        for(l=1; l<=7; l++){
            if(l>=(5-i) && l<=(3+i)){
                printf("%d", i+(i-1));
            }
            else{
                printf(" ");
            }
        }
        printf("\n");
    }
    for(i=3; i>=1; i--){
        for(j=1; j<=(2*i)-1; j++){
            printf("%d", (2*i)-1);
        }
        for(k=1; k<=8; k++){
            if(k>=(2*i)-1 && k<=7){
                printf(" ");
            }
        }
        for(l=1; l<=5; l++){
            if(l>=(4-i) && l<=(2+i)){
                printf("%d", (2*i)-1);
            }
            else{
                printf(" ");
            }
        }
        printf("\n");
    }

    return 0;
}
```

Output:

A screenshot of a macOS terminal window titled "ruhulsardar — Q4d — 80x24". The window has standard macOS window controls (red, yellow, green buttons) in the top-left corner. The terminal text shows a login session for user "ruhulsardar" on "Sun May 16 20:16:21 on ttys003". The prompt is "[3] 38169". The user enters a command that results in a series of characters: "1", "333", "55555", "77777777777777", "55555", "333", and "1". This is followed by status messages: "Saving session...", "...copying shared history...", "...saving history...truncating history files...", and "...completed.". The session ends with "[Process completed]".

```
ruhulsardar — Q4d — 80x24
Last login: Sun May 16 20:16:21 on ttys003
[3] 38169
ruhulsardar@Ruhuls-MBP ~ % /Users/ruhulsardar/Desktop/Clguploads/C/Assignment\ 5
/Q4d ; exit;
1      1
333    333
55555  55555
77777777777777
55555  55555
333    333
1      1
Saving session...
...copying shared history...
...saving history...truncating history files...
...completed.

[Process completed]
```